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The "Received" stamp of the Patent Office imprinted hereon acknowledges the filing of:

Applicant: John Harley

Serial & Docket No. 07/367,819 QMFF 114 CIP(2)

Filed: April 13, 1992

Papers Submitted:

~~Amendment with Exhibits A-F, Sequence Listing, Sequence Listing Diskette~~

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The "Received" stamp of the Patent Office imprinted hereon acknowledges the filing of:  
Applicant: John Harley

Serial & Docket No. 07/867,819 OMRF 114 CIP(2)  
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Date: December 2, 1996

By: Patrea L. Pabst, Reg. No. 31,284 20487/0088

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**For 3 1/2" DISK**

Format: ASCII Date: November 27, 1996  
Applicant: John Harley  
Title: Methods and Reagents for Diagnosis of  
Autoantibodies  
U.S.S.N. 07/867,819 Filed: April 13, 1992  
Computer: Gateway 2000 (IBM compatible) with  
MS-DOS 5.0  
Attorney: Patrea L. Pabst, Reg. No. 31,284  
Arnall, Golden & Gregory  
Docket No.: OMRF114cip2 20487/88



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U.S.S.N. 07/867,819

 **AVERY DENNISON**  
Office Products  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: John Harley

Filed: April 13, 1992 Examiner: Caputa, A.

## For: METHODS AND REAGENTS FOR DIAGNOSIS OF AUTOANTIBODIES

**Assistant Commissioner for Patents  
Washington, D.C. 20231**

## **AMENDMENT**

Dear Sir:

In accordance with Rules 37 C.F.R. 1.821-1.825, please amend the application as follows. Applicant believes no fee is necessary for this Amendment, however, if a fee is required, please charge Deposit Account No. 01-2507.

## In the Specification

On page 24, line 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14)-- after "PPPGMRPP"

On page 24, line 24, please insert --(amino acids 3-10 of Sequence Listing ID No. 13) -- after "PPPGIRGP"

On page 25, line 1, please insert --(Sequence Listing ID No. 1),-- after "GTEK AEDK"

On page 25, line 8, please insert --(amino acids 5-8 of Sequence Listing ID No. 6) -- after "POGR"

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On page 25, line 11, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 12, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 25, line 13, please insert --(Sequence Listing ID No. 119),-- after "PPPGXR".

On page 25, line 17, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 18, please insert --(amino acids 4-10 of Sequence Listing ID No. 14),-- after "PPPGMRP".

On page 25, line 22, please insert --(amino acids 4-10 of Sequence Listing ID No. 14),-- after "PPPGMRP".

On page 25, line 22, please insert --(amino acids 4-9 of Sequence Listing ID No. 14),-- after "PPPGMR".

On page 25, line 22, please insert --(amino acids 4-8 of Sequence Listing ID No. 14),-- after "PPPGM".

On page 25, line 23, please insert --(amino acids 4-7 of Sequence Listing ID No. 14),-- after "PPPG".

On page 25, line 23, please insert --(amino acids 5-8 of Sequence Listing ID No. 14),-- after "PPGM".

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On page 25, line 23, please insert --(amino acids 6-9 of Sequence Listing ID No. 14),-- after "PGMR".

On page 25, line 23, please insert --(amino acids 7-10 of Sequence Listing ID No. 14),-- after "GMRP".

On page 25, line 24, please insert --(amino acids 3-6 of Sequence Listing ID No. 14),-- after "PPPP".

On page 25, line 24, please insert --(amino acids 4-9 of Sequence Listing ID No. 14),-- after "PPPGMR".

On page 25, line 26, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 30, please insert --(Sequence Listing ID No. 120),-- after "PPPPP".

On page 25, line 30, please insert --(amino acids 1-4 of Sequence Listing ID No. 120),-- after "PPPP".

On page 25, line 34, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 26, line 11, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 26, line 17, please insert --(Sequence Listing ID No. 116),-- after "(PAPGMRPP)".

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On page 26, lines 20, 25 and 30, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 27, line 3, please insert --(Sequence Listing ID No. 117),-- after "PPPGMIPP".

On page 27, line 8, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 1, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 3, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 28, line 3, please insert --(Sequence Listing ID No. 121),-- after "PGIRGPPP".

On page 28, line 8, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 13, please insert --(Sequence Listing ID No. 122),-- after "PPPGIRPP".

On page 28, line 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 27, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

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On page 29, line 9, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 29, line 10, please insert --(Sequence Listing ID No. 121),-- after "PGIRGPPP".

On page 29, lines 14 and 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

Please replace the Sequence Listing, pages 30-96, mailed September 9, 1993, with the enclosed Sequence Listing, pages 30-69, and renumber the remaining pages in the application to be consecutive.

#### **In the claims**

1. (four times amended) A peptide forming a linear epitope for a human autoantibody selected from the group of peptides of less than forty amino acids, wherein the sequence of the epitope begins with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of

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Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAI (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVRTKDE (Sequence Listing ID No. 54), 234, KVVRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK

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Filed: April 13, 1992

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(amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWKA (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVEPTGKRFLLA (Sequence Listing ID No. 61), 379, ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRF (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No. 65), 433, VLMAMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMIWAKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

12. (five times amended) A method for screening patients for autoantibodies to Ro/SSA comprising reacting a biological sample with a peptide forming a linear epitope selected from the group of peptides of less than forty amino acids, beginning with the amino

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acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAIA (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184,

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RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVKRTKDE (Sequence Listing ID No. 54), 234, KVVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK (amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVEPTGKRFLLA (Sequence Listing ID No. 61), 379, ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No.

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65), 433, VLMAMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMIWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

#### Remarks

##### Amendments made to the specification

The amendments made to the specification merely insert Sequence Listing ID numbers in accordance with Rule 37 C.F.R. 1.821(2)(c) and, therefore, do not add new matter.

##### Amendments made to the specification September 9, 1993

In a telephone conversation November 22, 1996, between the Examiner and Applicant's counsel, the Examiner requested an explanation of the amendments made to the specification in the Preliminary Amendment mailed September 9, 1993.

Sequence Listing ID numbers were placed in the application after the gene sequences they represent. This was done to comply with Rule 37 C.F.R. 1.821(2)(c). Various amino acid symbols were deleted or replaced with others solely for the purpose of correcting typographical errors made in sequences already known in the art. Amendments were also made to sequences in the claims in the Amendment mailed March 21, 1994, to match those amendments that were made to the sequences September 9, 1993. Specifically:

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AMENDMENT

(1) The first "K" in Sequence Listing ID No. 22 was deleted. Support is found in Chambers, et al., *J. Biol. Chem.*, 263:(34)18043-18051 (1988), enclosed as Exhibit A and cited in the specification at page 10, line 19. Figure 3 of Exhibit A shows the correct Sequence Listing ID No. 22 at amino acids 86-97.

(2) The "N" in Sequence Listing ID No. 71 was changed to an "IV". Support is found in Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B and cited in the parent application to which this application claims priority, Serial No. 07/648,205, filed January 31, 1991, (notice of allowance mailed October 24, 1996), at page 18, lines 10 and 11, and in the grandparent application to which this application also claims priority, Serial No. 07/472,947, filed January 31, 1990, at page 19, lines 18 and 19. Figure 5 of Exhibit B shows the correct Sequence Listing ID No. 71 at amino acids 197-212.

(3) A "K" was inserted into Sequence Listing ID No. 74 after the first "G". Support is found in Spritz, et al., *Nucleic Acids Res.*, 24:10373-10391 (1987), enclosed as Exhibit C and cited in the specification at page 19, lines 4 and 5. Figure 4 of Exhibit C shows the correct Sequence Listing ID No. 74 at amino acids 132-145.

(4) The first "V" in Sequence Listing ID No. 75 was deleted. Support is found in Spritz, et al., *Nucleic Acids Res.*, 24:10373-10391 (1987), enclosed as Exhibit C and cited in the specification at page 19, lines 4 and 5. Figure 4 of Exhibit C shows the correct Sequence Listing ID No. 74 at amino acids 161-174.

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(5) The "O" in Sequence Listing ID Nos. 6, 48, 62, 85, 90, and 94 was replaced with a "Q". It is well known in the art that "Q" represents glutamine whereas "O" is not representative of an amino acid. Therefore, one skilled in the art would consider "O" in a sequence of amino acids to be a typographical error. However, support for the correct sequences is found as follows.

Sequence Listing ID No. 6 is correctly shown at amino acids 140-151 of Figure 3 in Rokeach, et al., *J. Biol. Chem.*, 264:5024-5030 (1988), enclosed as Exhibit D and cited in the specification at page 21, lines 1 and 2.

Sequence Listing ID No. 48 is correctly shown at amino acids 165-187 of Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

Sequence Listing ID No. 62 is correctly shown at amino acids 379-388 of Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

Sequence Listing ID No. 85 is correctly shown at amino acids 44-56 of Figure 5 of Sillekens, et al., *EMBO J.*, 6:3841-3848 (1987), enclosed as Exhibit E and cited in the specification at page 20, line 1.

Sequence Listing ID No. 90 is correctly shown at amino acids 263-270 of Figure 5 of Sillekens, et al., *EMBO J.*, 6:3841-3848 (1987), enclosed as Exhibit E.

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Sequence Listing ID No. 94 is correctly shown at amino acids 56-64 of Figure 4 of Sillekens, et al., *Nucleic Acids Res.*, 25:8307-8321 (1988), enclosed as Exhibit F and cited in the specification at page 20, line 9.

Amendments made to the Sequence Listing

The enclosed Sequence Listing is similar to the one mailed September 9, 1993, with the following changes.

(1) The correspondence address in the general information section has been updated.

(2) Sequence Listing ID Nos. 119-122 have been added to the Sequence Listing. Sequence Listing ID No. 119 is found on page 24, line 13 of the specification. Sequence Listing ID No. 120 is found on page 25, line 30 of the specification. Sequence Listing ID No. 121 is found on page 28, line 3 and page 29, line 10 of the specification. Sequence Listing ID No. 122 is found on page 28, line 13 of the specification.

(3) Sequence Listing ID No. 71 has been corrected to include an "Ile" before "Val" at amino acid position 1. Support for this sequence amendment is found at page 18, last line, as amended September 9, 1993, when the "N" was changed to "IV". As explained above, the correct sequence beginning with "Ile" is shown beginning at amino acid 197 in Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

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Filed: April 13, 1992

AMENDMENT

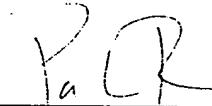
Amendments made to the claims

Since Sequence Listing ID No. 71 has been corrected to include "Ile" at position 1 of the sequence, as explained above, the numbering of amino acids of Sequence Listing ID No. 71 in claims 1 and 12 has been amended to correspond to the correct numbering. Specifically, "2-9" has been changed to "3-10" and "5-12" has been changed to "6-13".

**Declaration Under 37 C.F.R. §1.821**

I declare that the material on the diskette is the same as the enclosed paper copy of the Sequence Listing, that the Sequence Listing does not add new matter to the application, and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements may jeopardize the validity of the application or any patent issuing based thereon.

Respectfully submitted,

  
\_\_\_\_\_  
Patrea L. Pabst  
Reg. No. 31,284

Dated: November 27, 1996  
ARNALL GOLDEN & GREGORY  
1201 West Peachtree Street  
2800 One Atlantic Center  
Atlanta, Georgia 30309-3450  
(404) 873-8794

### APPENDIX: Claims as Pending

1. (four times amended) A peptide forming a linear epitope for a human autoantibody selected from the group of peptides of less than forty amino acids, wherein the sequence of the epitope begins with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEG GTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAIA (Sequence Listing ID No. 47), 145, GRALRKA (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HE LYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVKRTKDE (Sequence Listing ID No. 54), 234, KVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK (amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVPTGKRFLLA (Sequence Listing ID No. 61), 379,

ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No. 65), 433, VLMAMMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMIWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHVP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

2. (twice amended) A peptide of claim 1 consisting of between four and twenty five amino acids.

3. (twice amended) A peptide of claim 2 reactive with anti-Ro/SSA polyclonal antibodies.

10. (twice amended) A peptide of claim 1 labelled with a compound selected from the group consisting of dyes, fluorescent labels, chemiluminescent labels, enzymes, and radioactive labels.

11. (twice amended) A peptide of claim 1 immobilized onto a substrate.

12. (five times amended) A method for screening patients for autoantibodies to Ro/SSA comprising reacting a biological sample with a peptide forming a linear epitope selected from the group of peptides of less than forty amino acids, beginning with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRRTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAI (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino

acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HEKYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEKVKRTKDE (Sequence Listing ID No. 54), 234, KVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK (amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVPTGKRFLLA (Sequence Listing ID No. 61), 379, ASMNQRVVLGS (Sequence Listing ID No. 62), 365, EPTGKRF (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No. 65), 433, VLMAMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMIWAAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

13. (twice amended) The method of claim 12 wherein the peptide is labelled with a compound selected from the group consisting of dyes, fluorescent labels, chemiluminescent labels, enzymes, and radioactive labels.

15. The method of claim 14 further comprising detecting autoantibodies in the patient sample.

16. (three times amended) The method of claim 15 further comprising predicting the prognosis of the patient based on the reactivity of the patient sample with the Ro/SSA peptides.

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